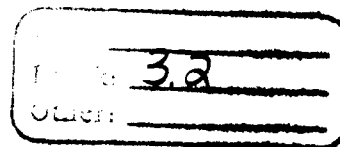


DATE: February 10, 1992

TO: William Beal

FROM: David O'Brien

SUBJECT: Analytical Data Review of Natex, Gulf South Environmental Laboratory
Sample Delivery Group 9149, Episodes HUI, HUS, and HVH
Olin - McIntosh
Domestic Well Samples
File 90B449C-3D



3 2 1240

3623

The QA/QC information submitted by Gulf South Environmental Laboratory (GSEL) to support the quality of the analytical results for 14 domestic well samples and 3 trip blanks collected November 11 through November 15, 1991, has been reviewed. Two additional samples for inclusion with this laboratory sample delivery group (SDG) were provided by the EPA. These two additional samples will be evaluated against information furnished by the EPA and their results are not presented in this report. GSEL provided analytical results for Contract Laboratory Program (CLP) Target Compound List (TCL) volatiles, Target Analyte List (TAL) mercury, and conventional parameters chloride (method 9252), sulfate (method 9038), total suspended solids (TSS) (method 160.2), and total organic carbon (TOC) (method 415.1); as SDG 9149, in episodes HUI/01-04, HUS/01-11, and HVH/01-05.

The QA/QC information consisted of all TCL and TAL forms and the raw data necessary for CLP review, as well as all raw data and QA/QC information necessary for review of the conventional parameters section. Volatiles analysis was performed in a manner consistent with the Special Analytical Services (SAS) section of the CLP, using a 25 ml sample size instead of the routine CLP specified 5 ml sample size. The purpose of using this SAS method was to reduce the sample contract required detection limits (CRQL) to one-fifth the routine CLP detection limits for all volatile analytes (2 $\mu\text{g/L}$ rather than 10 $\mu\text{g/L}$). Initial calibration standards were analyzed at 2, 4, 10, 20, and 40 $\mu\text{g/L}$ (one-fifth the 3/90 CLP concentrations), and the 10 $\mu\text{g/L}$ standard was used as the continuing calibration standard. These two procedural changes (25 ml purge volume rather than 5 ml, and calibration standards 5 times lower than routine CLP) are basic components of all low concentration volatile organic methods. Volatile analytes were reviewed by "National Functional Guidelines For Organic Data Review", dated 3/90; and mercury was reviewed by "Functional Guidelines for Evaluating Inorganics Analysis" dated 7/88. The conventional parameters section was reviewed for compliance with the QA/QC requirements of methods used for analysis.

In the volatile analytical fraction, detected analytes are reported from the first analysis in which the concentration of the analyte falls within the instrument calibration range. Those reported analytes with concentrations below this range are qualified estimated concentration "J".

Two trip blanks were not recorded on the chain-of-custody forms.

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Laboratory detected analytes for the CLP portion of this SDG, with appropriate Functional Guidelines data qualifiers, are reported in the attached tables. Unqualified data are suitable for use. Qualified data are suitable for use with the limitations indicated in this report. Rejected data are unsuitable for use and the presence or absence of such analytes cannot be determined (there was no rejected data for this SDG). Items which affect the accuracy and precision of the levels of detected analytes are reported in the following sections.

VOLATILES

- 1). 2-Butanone was found in one method blank and one trip blank. The analyte was not found in any of the samples.
- 2). Sample detects reported in this section were the solvents methylene chloride, acetone, chloroform, and 1,1,2,2-tetrachloroethane. Methylene chloride and acetone are common laboratory contaminants.
- 3). Methylene chloride was found in 3 of 4 method blanks and all trip blanks. The maximum concentration reported was 14 $\mu\text{g/L}$.
- 4). Acetone was found in 1 of 4 method blanks and 2 of 4 trip blanks. The maximum concentration reported was 5 $\mu\text{g/L}$.
- 5). All reported sample values for methylene chloride and acetone are qualified undetected "U" at either the listed value or the sample reporting limit by the following Functional Guidelines directive:
 - a). For common laboratory contaminants, no positive sample results should be reported unless the concentration of the compound in the sample exceeds 10 times the concentration of the compound in any blank associated with the samples.
- 6). Chloroform in samples DW-08 and DW-12 is qualified estimated quantity "J". Note : although the reported values were less than one-fifth the sample CRQL, the analyte was identified by GC/MS.
- 7). Chloroform in samples DW-27 and DW-34 is qualified estimated quantity "J". The reported values were half the sample CRQL and the analyte was identified by GC/MS.

8). 1,1,2,2-Tetrachloroethane in sample DW-25 is qualified estimated quantity "J". Note : although the reported value was less than one-fifth the sample CRQL, the analyte was identified by GC/MS.

9). Relative response factors for ketones (acetone, 2-butanone, 2-hexanone, and 4-methyl-2-pentanone) frequently exceeded percent difference requirements (30% for initial and 25% for continuing). Average relative response factor minimum was not met by 2-hexanone and one of the initial response factors for 4-methyl-2-pentanone. Based on professional judgement, qualification of these analytes in samples was not necessary. Ketones are often observed to give poor and variable response.

TAL MERCURY

- 1). Mercury was not found in samples from this SDG.
- 2). The raw data and QA/QC results indicate no problems with the results reported for this analytical fraction.

CONVENTIONAL PARAMETERS

- 1). The raw data and QA/QC results indicate no problems with the results reported for these analytical fractions.

3 2 1252

OLIN - DOMESTIC WELLS

VOA ANALYTES/ MERCURY

SDG 9149

(results = ug/L)

VALIDATED RESULTS

SAMPLE ID DW-01 DW-03 DW-04 DW-25 DW-27 5A585C DW-06 DW-08 DW-41 DW-12 DW-34 35A358
LAB SAMPLE ID HUI01 HUI02 HUI03 HVH01 HVH04 HUS-7 HUS08 HUS09 HUS10 HUS02 HUS03 HUS04

VOA ANALYTES

METHYLENE CHLORIDE	2 U	2 U	2 U	8 U	4 U	2 U	2 U	2 U	4 U	2 U	2 U	3 U
ACETONE					2 U	3 U		3 U			3 U	3 U
CHLOROFORM					1 J			0.2 J		0.3 J	1 J	2
1,1,2,2-TETRACHLOROETHANE				0.3 J								

TOTAL MERCURY

MERCURY ALL SAMPLES WERE NON-DETECTS.

NOTE : LABORATORY NON-DETECTS LEFT BLANK.

ATA VALIDATION QUALIFIERS

J = ANALYTE POSITIVELY IDENTIFIED; CONCENTRATION IS ESTIMATED.

U = ANALYZED, BUT NOT DETECTED ABOVE THE SAMPLE REPORTING LIMIT.